Pre-Lab Exercise for Force Between Current-Carrying Wires

1. Discuss the physics of the force between current-carrying wires.
2. Give a brief description of how the force between current-carrying wires will be measured in this laboratory. This experiment is sometimes known as the "Current Balance" experiment. What is actually being "balanced" in this experiment?
3. Justify (give reasons for) equations (3), (4) and (5) in the write-up.